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ANIMAL HEALTH AND NUTRITION

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ANIMAL HEALTH AND NUTRITION

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1. The less developed parts of the world lie, for the most part, in the tropical and subtropical zones. Temperature conditions in these areas are favorable for plant growth. Except for the great deserts in North Africa and southwestern Asia, most of these regions have ample rainfall to support good to luxuriant plant growth. Such vegetation provides food for herbivorous animals, hence the potentiality for producing livestock in these regions is great.

2. This potentiality is realized in only a few relatively small areas. Improved livestock breeds are needed but at present all livestock raising is greatly hampered by widespread destructive diseases and parasites. Domestic animals have difficulty in surviving in many regions and those that do survive often are unthrifty and unproductive. Grains in these regions are seldom used as animal feeds since generally they are needed for direct consumption by the human population.

3. Agriculture is the basic and principal occupation of the vast majority of the people of the less developed areas. The most serious problems of these people are food and health, the former having an important influence on the latter.

4. The potentialities for a better livestock industry are favorable in most of the less developed countries, and their realization would benefit the people of those countries in two ways:

(a) By improving the level of nutrition and thus the health and vigor of the people. The nutritional level of most of the peoples of the less developed countries is poor. Most of them subsist too largely on diets consisting of starches and sugars derived from plants. Protein consumption, generally too low in total, usually consists of vegetable proteins which are deficient in some amino acids, such as threonine, which are essential to human health. The "quality" proteins of animal origin that are found in meat, milk, and eggs, would eliminate this deficiency, improve the general health level, and reduce the infant death rate from "kwashiorkor" which is due to protein starvation, a disease prevalent in many tropical areas.

(b) By improving the economic condition of the people. Foods of animal origin are in demand in all parts of the world. Many tropical and subtropical regions could export large amounts of such foods to other parts of the world if they could control the diseases which now not only limit production but also serve as trade barriers.

5. Animal Disease Control.

The existence in some of the less developed areas (notably Africa) of destructive epizootic animal diseases not adequately controlled poses a threat to the

livestock industries of other countries as well. Thus it should be clear that external assistance in the control and eradication of these diseases will benefit not only the host country but it will also eliminate a continuing hazard to the livestock industries in countries where control or eradication has been accomplished, or where these diseases have never existed.

6. On a world-wide basis, foot and mouth disease is probably the most prevalent infectious disease of animals. Of the great livestock raising continents, only North America and Australia are free from it. The disease is under reasonable restraint in Europe where outbreaks are vigorously combatted. It occurs in all parts of Africa, in most of Asia, and in most of South America. This disease not only hinders the development of cattle and swine industries where it occurs because of its damaging effect on the animals but it restricts export of live animals and fresh food products of animal origin with countries where the disease does not occur because the latter impose embargoes on the importation of animals and animal products that are likely to contain the virus.

7. Rinderpest, which destroys more cattle than any other disease, continues to prevail in many areas of Africa and Asia. Contagious pleuropneumonia of cattle still occurs in parts of Africa, Asia and Australia, whereas it has been stamped out in Europe and North America and apparently has never occurred in South America. African horse sickness and African swine fever are destructive diseases that have long been known in Africa but in recent years have invaded some of the Mediterranean countries of Europe. Two diseases caused by trypanosomes, surra in Asia and nagana in Africa, cause severe losses in cattle, horses, and other species. Piroplasmosis of cattle and other blood protozoan diseases cause serious losses in many areas. Anthrax prevails in all continents and little is done to control it in many regions. A series of other diseases could be mentioned, particularly from the continent of Africa,but enough has been cited to show that a series of destructive diseases of animals hampers the raising of livestock in the less developed areas of the world and some of them present a direct hazard to the rest of the world.

8. The control of animal diseases in any area or country depends upon:

(a) the existence of a supply of veterinarians with the requisite technical ability.

(b) the establishment of an organization charged with the task of controlling and eradicating animal diseases, and

(c) the enactment of legislation which will adequately finance this organization and provide it with sufficient authority to enable it to do its work without fear or favor.

9. Some of the less developed countries lack the first requirement, hence their deficiency is fundamental and most difficult to correct. When the first requirement can be met reasonably well, the second and third can be met only through determined government efforts. Unfortunately, perhaps partly for financial reasons, there are many countries which meet the first requirement but fail in the second and third.

10. The African Situation.

There is concern that the manifold problems of transition from colonial to national status, the problems implicit in determining priority uses for limited available resources, and in many cases the loss of experienced technical personnel may, in some of the newly independent nations, combine to jeopardize advances already made in bringing the more destructive animal diseases under control.

11. Until recently there has been only one veterinary college (in the Republic

of South Africa) in all of the African continent which lies south of the Sanara desert. This area has a human population of approximately 200 million and a livestock population of perhaps 185 million not including about 5 million camels. Some four years ago the estimated number of qualified veterinarians serving this great area was somewhat fewer than four hundred. In the more advanced nations with human and livestock population of about the same size, but with much smaller land areas, there are more than 20,000 veterinarians, fifty times as many, and the demand for services is still greater than the supply.

12. Because of the decline in numbers of European trained veterinarians and the lack of veterinary schools necessary to train nationals in Central and Western Africa, the governments of these areas are faced with the exceedingly difficult problem of providing the agricultural sectors of the economy with even a reasonable approach to adequate veterinary service. Although figures are not available it is believed that fewer than 100 veterinarians are currently available to serve the large livestock population of that area.

13. Asia and Latin America.

There are about 30 colleges of veterinary medicine operating in Latin America and more than 40 in Asia, not counting those of the Soviet Union. About three-fourths of the Asiatic schools are located either in India (17) or Japan (14). Burma, Ceylon, China, Taiwan, Iran, Korea, Lebanon, Pakistan, Siam, and the Philippine Islands have veterinary schools. The other countries send their technicians to neighboring institutions or to Europe or America for training as veterinarians.

14. What Needs to be Done?

Obviously, a vigorous attack on the epizootic diseases of livestock cannot be carried out without a sufficient staff of well trained veterinarians and a firm policy which will allow governments to marshall their forces and finances to make the attack effective. The financial problems are beyond the scope of this paper but it may be observed that all of the money in the world will not be enough to accomplish the purpose if governmental organization is not adequate to provide the necessary vigor and stability.

15. If enough capable veterinarians are not available for the task that is to be done, foreign veterinarians may be employed to serve in some of the key positions, citizens may be sent abroad for training in the veterinary schools of Europe or America if training nearer at hand is not possible, and finally, if veterinary faculties can be assembled, veterinary schools may be established for training citizens in their countries.

16. The Use of Foreign Veterinarians.

In areas where there are very few veterinarians at present, such as in Central Africa, the most expeditious way to make a beginning on animal disease control is to bring in qualified veterinarians from abroad. Undoubtedly, since there is a world shortage of veterinarians, it will be difficult to recruit such men. Furthermore, there are customs and language problems which militate against their success, and the cost will be great. Such men should be used largely in some of the key positions such as the heads of schools and services. Nationals should be trained by these persons to serve with them and as soon as qualified national technicians are available they should replace their foreign colleaques.

17. The Training of Nationals in Foreign Schools

The training of nationals of the less developed countries that have no veterinary schools is also beset with problems. Students should be selected upon the basis

of ability, previous training and experience, and any other qualifications that mark the individual as suitable for the job to which his training is to fit him. The basic professional training is best given, if facilities are available, in neighboring countries that have similar or identical languages, customs and cultures. If they are to be sent for study to a country where a different language is used they should first be given intensive instruction in that language and required to attain a reasonable proficiency in it before beginning their professional studies. Since the admission requirements of the veterinary schools of the more developed countries are increasingly rigorous it may be necessary to send some students abroad for one or more years' study of the basic sciences before the professional course may be begun.

18. Although most of the veterinary schools of Europe and America are crowded and have more applicants than they can accommodate, many of them undoubtedly would be able to find places for qualified students from the developing countries. The Royal Veterinary College of Copenhagen in 1961 established a special permanent faculty in veterinary medicine for students from the developing countries. Each year five students are accepted. During the first year they learn the Danish language and Danish social, agricultural and cultural traditions. Afterwards they begin their professional studies in the Royal Veterinary College along with the regular Danish students. It is probable that the finding of places in veterinary schools of the more developed countries will not be as difficult as will be the finding of qualified candidates and the means of supporting them during the period of their education.

19. The preceding statements have had to do with the basic training of veterinarians. Another type of training is also needed, that is, post-graduate specialized training of those who will become teachers and leaders of disease control programs in their countries. This does not present as many difficulties as the basic professional training. Less time is needed and there are many places where such training is available. Research institutes and universities in Europe and America are open to such students and actually the number being trained today is considerable although far short of the need.

20. As early as 1920 the Alfort Veterinary School commenced offering special post-graduate courses for young French-speaking veterinarians who were destined for the colonial service. In 1938 a separate school, the "Institut d'Elevage et de Medecine Veterinaire des Pays Tropicaux" began giving instructions to teachers and research workers for foreign service. It has been reported that this institute expects within the next five years to train a supply sufficient to meet the needs of the French-speaking countries that formerly were French colonies.

21. The English-speaking countries have no similar institution; however, special instruction, in English, is given in both Denmark and Sweden for prospective veterinary teachers from the less developed countries.

22. Establishing National Veterinary Schools.

If the need for veterinarians is estimated to amount to 25 or more per year, the country should consider establishing a veterinary school of its own. If the needs are less, it would ordinarily be better for the country to endeavor to interest one or more of its neighbors, preferably having the same or a similar language, in establishing a jointly supported school, that is, a school to serve a region of several countries instead of one. A well equipped and staffed school can train as many as 50 to 60 students per class, hence a single, well supported school of this size can serve a region much better and much more economically than two or more smaller and poorly supported ones. Such a coordinated effort

would also provide for maximum use of all available qualified nationals from the participating countries to staff the positions. It is quite probable that foreign specialists would also be needed initially to provide adequate staffing.

23. Livestock Inspectors.

In countries where field work must be done over wide areas and there are too few veterinarians to do it, persons with lesser training may be used. These are termed variously as livestock inspectors, veterinary assistants, veterinary technicians, etc. These persons may be trained in special schools, or the training can be given by the veterinary faculties. Such persons have been used extensively in Africa, in the Soviet Union, and in some Asiatic countries.

24. These livestock inspectors can be used as quarantine officers, as inspectors of shipped stock, as routine vaccinators, as collectors of blood or other materials for laboratory diagnosis, as artificial inseminators, and so forth. They should be given career opportunities but should not be confused with the professionally trained veterinarians who alone should make diagnoses, and plan and execute disease control and eradication programs.

25. Efforts to begin veterinary training in some of the new nations of Africa have already begun. These should be assisted if help is needed. A veterinary faculty is being established in the new University of East Africa in Kenya, it having grown out of a school previously located at Makerere, Uganda. Discussions are under way on a new college of veterinary medicine to be located at the University College at Ibadan, Western Nigeria with clinical instructions to be given at Vom, Northern Nigeria where a school for veterinary assistants is now operating. There have been discussions also about a new veterinary school at Zaria, at the University of Northern Nigeria, with the clinical instruction being given at Vom, and about a new French-speaking school at Dakar, Senegal.

26. Strengthening of Existing Veterinary Schools and Disease Control Organizations.

In many of the less developed countries there are reasonable numbers of veterinarians but the necessary organization and financial support is deficient. For example, there are 22 veterinary colleges in South America, one in Central America, and four in Mexico. Thus all of the principal livestock raising countries have at least one veterinary school and some have several. The urgent need of these schools is for increased financial support and for more and better trained full time faculty members. At present it is common for these countries to attempt to gain the greatest possible advantage from the limited number of qualified people, resulting in faculties composed of part-time professionals who are also attempting to render full-time service elsewhere.

27. The same observations are applicable to some of the Asian countries, although the part-time faculty system is not usual there. Shortage of schools and veterinarians is not the principal problem in most of Asia. It is the low level of education and the lack of resources among the general population that prevent the efficient operation of disease control services.

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